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How Do Families and Unattached Individuals Respond to Layoffs? Evidence from Canada

by René Morissette and Yuri Ostrovsky

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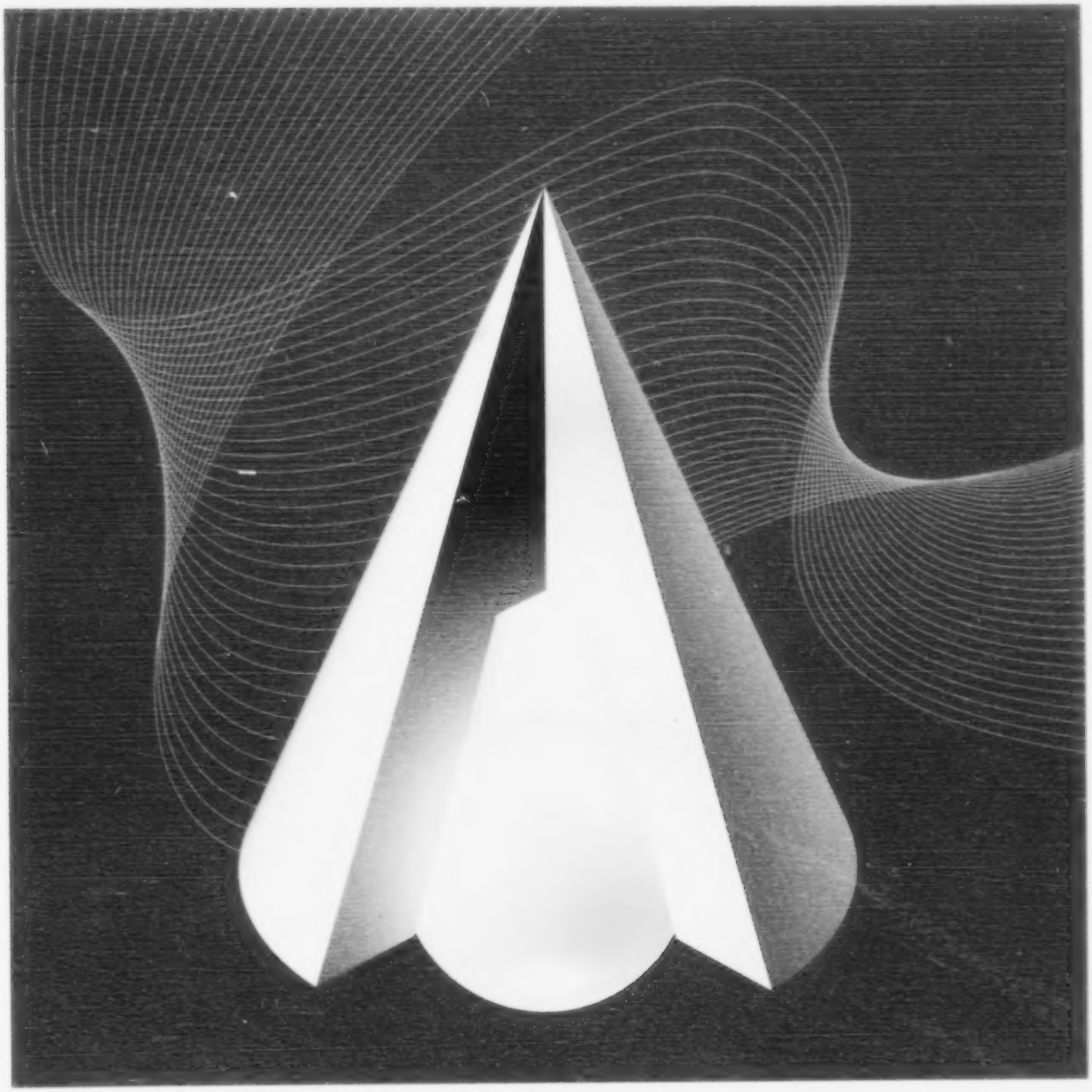

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How Do Families and Unattached Individuals Respond to Layoffs? Evidence from Canada

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Abstract

Using data from a large Canadian longitudinal dataset, we examine whether earnings of wives and teenagers increase in response to layoffs experienced by husbands. We find virtually no evidence of an 'added worker effect' for the earnings of teenagers. However, we find that among families with no children of working age, wives' earnings offset about one fifth of the earnings losses experienced by husbands five years after the layoff.

We also contrast the long-term earnings losses experienced by husbands and unattached males. Even though the former group might be less mobile geographically than the latter, we find that both groups experience roughly the same earnings losses in the long run. Furthermore, the income losses (before tax and after tax) of both groups are also very similar. However, because unattached males have much lower pre-layoff income, they experience much greater *relative* income shocks than (families of) laid-off husbands.

Keywords: job loss; layoffs; income instability; labour supply; earnings disruption; employment insurance benefits; tax system

Executive summary

Do individuals respond to the occurrence of a layoff in the family by increasing their employment income? If so, what is the magnitude of their response? Since what happens at the family level is a key determinant of individuals' well-being, identifying the degree to which family members stabilize family income in the event of a layoff is critical for a thorough understanding of the welfare consequences of earnings shocks. Yet, even though a large body of empirical evidence has shown that worker displacement leads to long-term earnings losses at the individual level, relatively few studies have examined these questions.

The goal of this paper is twofold. First, we wish to provide recent evidence on whether earnings of wives and teenagers increase in response to husbands' layoffs. To do so, we use a large longitudinal Canadian dataset that covers the 1987-to-2001 period. Our dataset is based on tax records and thus contains fairly accurate information about the annual earnings of husbands, wives and teenagers. It also contains accurate information on Employment Insurance (EI) benefits and income tax paid by family members, thereby allowing us to assess whether earnings of wives and teenagers stabilize family income to a greater extent than EI benefits and the tax system do, in the event of husbands' layoffs.

Second, we wish to contrast the long-term earnings losses experienced by laid-off husbands to those of unattached individuals, thereby providing estimates of the consequences of layoffs for an increasingly important type of household that cannot rely on the presence of a second earner. When doing so, we compare the magnitude of the income losses (before tax and after tax) experienced by families of laid-off husbands, on the one hand, and unattached males, on the other. As a result, we can quantify the magnitude of the relative income shocks experienced in the long term by both groups.

Our main findings can be summarized as follows. First, we find virtually no evidence that earnings of youth increase in response to fathers' layoffs. We also find no evidence of an 'added worker effect' for Canadian wives in the aggregate. However, we do find evidence that, among families with no children of working age, earnings of wives increased during the 1990s following husbands' layoffs. Our estimates for this group of families imply that, five years after husbands' layoffs, increases in wives' earnings compensated for roughly 22% of the earnings losses experienced by husbands.

Second, we show that laid-off husbands and unattached men experience roughly the same earnings losses in the long run. We also find that families of laid-off husbands incur similar income losses before tax and after tax, compared with unattached males. However, because unattached males have much lower pre-layoff after-tax income, they end up experiencing much greater *relative* income shocks than the families of laid-off husbands. This, in turn, suggests that layoffs among adult male earners increase income instability much more for unattached males than they do for families of laid-off husbands.

I. Introduction

Do individuals respond to the occurrence of a layoff in the family by increasing their employment income? If so, what is the magnitude of their response? Since what happens at the family level is a key determinant of individuals' well-being, identifying the degree to which family members stabilize family income in the event of a layoff is critical for a thorough understanding of the welfare consequences of earnings shocks. Yet, even though a large body of empirical evidence has shown that worker displacement leads to long-term earnings losses at the individual level (Ruhm 1991; Jacobson, LaLonde and Sullivan 1993; Stevens 1997; Morissette, Zhang and Frenette 2007), relatively few studies have examined these questions.

One notable exception is Stephens (2002), who quantifies the labour supply response of wives to husbands' displacement. Based on U.S. data (from the Panel Study of Income Dynamics) that covers the 1968-to-1992 period, his findings suggest that, five years after displacement, increases in wives' work hours compensate for roughly 30% of husbands' earnings losses.

While these numbers shed new light on the degree to which increases in wives' labour supply mitigated the earnings losses of displaced husbands during the 1970s and the 1980s in the United States, whether they can be generalized to other industrialized countries or time periods is unknown. In particular, there are good reasons to believe that they might overestimate the degree to which wives' earnings respond to husbands' layoffs nowadays.

One reason is that women's labour supply behaviour has changed significantly over the last two decades. Recent evidence suggests that women's labour supply has become much less responsive, both to their own wages and to the wages of their husbands in the 1990s, when compared with the 1980s (Blau and Kahn 2005). Since a growing proportion of women entered the labour market and started working full time over the last two decades, fewer of them now have the ability to increase their work hours at the extensive margin (by entering the labour market) or at the intensive margin (by increasing their hours, conditional on participation) in response to declines in husbands' wages. Hence, fewer of them might also have the ability to increase their labour supply in response to husbands' displacement. The substantial growth in the risk of divorce over the last three decades, along with changes in women's attitudes toward family and work, might also have induced some women to adopt a labour-supply behaviour that is fairly independent of their husbands' outcomes. All of these factors suggest that wives' labour supply response to husbands' job loss might have been smaller in the 1990s than it was during the 1970s and 1980s. Unless the growth in female wages over the last few decades fully offsets this potentially smaller labour supply response, the implication is that wives' annual earnings are likely to have compensated for the earnings losses of displaced husbands to a smaller extent in the 1990s than they had done in the 1970s and 1980s.

Conversely, it is conceivable that families now adjust to husbands' layoffs not only through changes in wives' labour supply, but also through increases in work hours of children of working age. Given that a growing proportion of youth postponed departure from home in recent years (Card and Lemieux 1997), families may, *a priori*, respond to husbands' layoffs partly through an increase in youth earnings. However, many teenagers and young adults attend school full time and thus cannot devote much time to paid work; whether this happens or not is unclear and remains to be investigated.

While changes in women's labour supply and youth living arrangements have potentially altered families' response to layoffs, the substantial growth in the proportion of unmarried individuals over the last two decades has increased the relative importance of households that cannot benefit from any 'added worker effect.' In 2005, 34% of all family units in Canada consisted of unattached individuals, up from 27% in 1980.[1] These changes in family structure raise an important question: how do earnings losses of unattached workers compare with those of their married counterparts?

Earnings losses of unattached workers might differ from those of married workers for a variety of reasons. Since the former group are likely to be more geographically mobile than the latter, they might take advantage of favourable job offers in other local labour markets more frequently, after losing their job. As a result, following displacement, they might incur smaller earnings losses than the latter group. Furthermore, as long as they have lower wealth holdings than their married counterparts, unattached individuals might search more intensely for new jobs following a layoff. This may reduce the duration of the unemployment spell that they incur after job loss, thereby mitigating their earnings losses in the short run. However, this may also lead them to accept lower wage offers and thus potentially incur greater long-term earnings losses than those suffered by displaced married workers.

Even if long-term earnings losses of married workers and unattached workers were identical and no 'added worker effect' whatsoever were observed among families, the mere presence of a second earner in many families suggests that the magnitude of the relative income shocks due to layoffs might be much smaller among families than among unattached individuals. This, in turn, raises the possibility that job loss might increase income instability much more among the latter group than among the former. While recent work has investigated whether job loss can account for part of the increase in earnings instability in the United States (Stevens 2001), the question of whether earnings shocks due to layoffs generate relative income shocks—and thus, increases in income instability—of varying magnitude across household types has received little attention.

The goal of this paper is twofold. In light of the changes in women's labour supply and youth living arrangements outlined above, we first wish to provide recent evidence on whether earnings of wives and children of working age increase in response to husbands' layoffs. To do so, we use a large longitudinal Canadian dataset that covers the 1987-to-2001 period. Our dataset is based on tax records and thus contains fairly accurate information about the annual earnings of husbands, wives and teenagers. It also contains accurate information on Employment Insurance benefits and income tax paid by family members, thereby allowing us to assess the income losses (before tax and after tax) experienced by families as a result of layoffs.

Second, we wish to contrast the long-term *earnings* losses experienced by laid-off husbands to those of unattached individuals, thereby providing estimates of the consequences of layoffs for an increasingly important type of household that cannot rely on the presence of a second earner. When doing so, we compare the magnitude of the *income* losses (before tax and after tax) experienced by families of laid-off husbands, on the one hand, and unattached males, on the other. As a result, we can quantify the magnitude of the relative income shocks experienced in the long term by both groups.

1. These numbers are drawn from CANSIM table 202-0401.

Our main findings can be summarized as follows. First, we find virtually no evidence that earnings of youth increase in response to fathers' layoffs. We also find no evidence of an 'added worker effect' for Canadian wives in the aggregate. However, we do find evidence that, among families with no children of working age, earnings of wives increased during the 1990s following husbands' layoffs. Our estimates for this group of families imply that, five years after husbands' layoffs, increases in wives' earnings compensated for roughly 22% of the earnings losses experienced by husbands.

Second, we show that laid-off husbands and unattached men experience roughly the same earnings losses in the long run. We also find that families of laid-off husbands incur similar income losses before tax and after tax, compared with unattached males. However, because unattached males have much lower pre-layoff after-tax income, they end up experiencing much greater relative income shocks than families of laid-off husbands. This, in turn, suggests that layoffs among adult male earners increase income instability much more for unattached males than they do for families of laid-off husbands.

II. Prior research

Since the early 1990s, numerous studies have examined the magnitude of the earnings losses due to displacement (see the reviews by Fallick 1996 and Kletzer 1998). Using Pennsylvania administrative data, Jacobson, LaLonde and Sullivan (1993) show that the earnings losses of high-tenure prime-age workers persist well beyond the time of displacement. Earnings fall even before the displacement takes place and drop sharply at the time of the displacement. Even several years after the displacement took place, displaced workers report quarterly earnings that are about 25% lower than their pre-displacement earnings. Worse still, it seems very likely that the earnings of displaced workers do not return to their expected levels at any time. Ruhm (1991) and Stevens (1997) also analyse the earnings losses of displaced workers, using data from the Panel Study of Income Dynamics (PSID). While Ruhm (1991) finds that, four years after displacement, weekly earnings of displaced workers are 10% to 13% lower than those of their non-displaced counterparts, Stevens (1997) shows that the annual earnings of displaced workers remain about 9% below their expected levels six or more years after displacement.[2] Eliason and Storrie (2006) also find long-term earnings losses as a result of job displacement. In all of the aforementioned studies, no attempt is made to distinguish the long-term earnings losses of displaced husbands from those of displaced unmarried males.

Since individuals who become unemployed through mass layoffs suffer substantial and persistent earnings losses, one important question is whether various family members, especially the wives of displaced husbands, adjust their labour supply to mitigate the impact of their husbands' earnings losses. While earlier studies using cross-sectional data have failed to detect an empirically important 'added-worker' effect (e.g., Heckman and MaCurdy 1980, Cullen and Gruber 2000), Stephens (2002) uses longitudinal data from the PSID and finds that five years

2. While Jacobson, LaLonde and Sullivan (1993) require displaced workers to have at least six years of tenure with their employer, Ruhm (1991) and Stevens (1997) do not impose this restriction.

after husbands' displacement, wives' work hours increase significantly, compensating for 30% of husbands' earnings losses.[3]

Because government transfers, such as Employment Insurance (EI) benefits are generally provided for a limited period of time (e.g., 50 weeks) while others, like social assistance, are generally provided when EI benefits are exhausted, the finding that wives' earnings only partially offset husbands' earnings losses suggests that husbands' displacement induces, in the longer run, a drop in family income.[4] However, because the tax system mitigates the income fluctuations experienced by families (Kniesner and Ziliak 2002), the extent to which families' disposable income drops following husbands' unemployment remains to be determined. Moreover, it is conceivable that other family members partially adjust their labour supply in response to husbands' unemployment (Jenkins 2000: 552), providing an additional channel through which the adverse consequences of husbands' unemployment on family income could potentially be reduced.

III. Data and concepts

We use the Longitudinal Administrative Databank (LAD) constructed by Statistics Canada along with records from the Employment Insurance Administrative Database (EIAD) constructed by Human Resources and Social Development Canada (HRSDC). The LAD is a 20% random sample of Canadian tax filers. It contains numerous income and demographic variables such as employment income, self-employment income, Employment Insurance (EI) benefits, registered pension plan contributions, age, marital status, gender and family composition.[5]

The LAD has numerous strengths. First, because it draws information from personal income tax returns, it provides fairly accurate measures of the annual earnings of husbands, wives and other family members for the 1982-to-2004 period. Second, it contains information about government transfers and after-tax income and thus allows us to assess the stabilization role played by EI benefits and the tax system. Third, because it covers a relatively long time period, it allows us to analyse the earnings of husbands, wives and teenagers several years before and after husbands' layoffs, thereby satisfying an important requirement of any reliable estimation method of the impact of programs or events (Jacobson, LaLonde and Sullivan 1993).

Like most administrative datasets, the LAD has limited information about family demographics. While it includes data on individuals' age, sex, marital status and province of residence, it has no information about a person's work hours, educational attainment or occupation. To minimize concerns regarding unobserved heterogeneity in workers' age-earnings profiles (across, say,

3. Stephens (2002) also shows that the magnitude of the increase in wives' work hours depends on the magnitude of husband's earnings losses: the larger are husbands' earnings losses, the greater is the increase in wives' work effort.
4. This is what Stephens (2001) finds, using data from the Panel Study of Income Dynamics.
5. Filers are attached to their spouses (legal and common law) by the spouse's Social Insurance Number (SIN) listed on the tax form or by matching on name, address, age, sex, and marital status. Once selected, individuals are in the sample whenever they appear on the annual T1 Family File (T1FF). The Longitudinal Administrative Databank is representative on a cross-sectional basis, i.e., each year's sample is a representative sample of the population of all persons in T1FF who have a SIN. To maintain a representative sample, a part of each year's sample consists of a selection of those individuals who appear on the T1FF for the first time since 1982.

education levels), we use fixed effects models that allow for the presence of worker-specific intercepts.

To identify layoffs, we link the LAD to the EI record files containing selected variables from the EIAD developed by HRSDC. The EI files contain data for all EI applicants (rather than only for EI recipients) from 1987 to 2001 and provide the breakdown of specific EI benefit types as well as reasons for separation taken from the Record of Employment (ROE).

Our comparison of LAD-EIAD with data from the Longitudinal Worker File (LWF) of Statistics Canada shows that LAD-EIAD captures between 91% and 100% of the layoffs registered by LWF (Table A.1), thereby confirming that LAD-EIAD provides a fairly good coverage of layoffs that occurred during the 1990s. Unlike LAD-EIAD, the LWF also contains information that allows us to distinguish permanent layoffs from temporary layoffs.[6] The LWF shows that during the 1990s, roughly 55% of the layoffs observed were permanent while the remaining portion consisted of temporary layoffs. Hence, the earnings losses and income losses documented in this study using LAD-EIAD will result from a mixture of permanent layoffs and temporary layoffs. As will be shown below, however, we will also conduct separate analyses for a subset of permanent layoffs: those that are associated with a loss in pension coverage.

Our first sample consists of families where husbands are aged from 25 to 40 in 1987. This age restriction is implemented to ensure that husbands are aged at most 54 in 2001, the last year used in our multivariate analyses. To have at least three usable observations, we require that couples be present in the sample for at least three years (1987, 1988 and 1989). We do not have layoff information prior to 1987, so our estimation results are based on the 1987-to-2001 period. Nevertheless, we exclude those husbands who received any EI benefits from 1982 to 1986 as the best possible way of avoiding the 'contamination' from previous layoffs.

To focus on families that primarily rely on earnings from paid work, we exclude couples with combined self-employment income over $500 (in 1992 dollars, or over $595 in 2002 dollars) in absolute terms, in any year from 1982 to 2001. Similarly, we exclude families with combined total income over $200,000 (in 1992 dollars, or over $238,000 in 2002 dollars) and those who lived outside the 10 Canadian provinces. Couples had to be married during the period from 1987 until and including the year in which the husband was laid off (or until 1989 if the husband was laid off before 1989).

Our layoff variable is based on the first layoff experienced by a husband during the 1987-to-2001 period. After the first layoff occurs, couples are kept in the sample for as long as they are present in LAD as a married couple but for a maximum of five years. If the first layoff occurred after 1987, we also require couples to have had positive earnings prior to and including the layoff year. For instance, if a husband was laid off in 1992, he must have had positive earnings and to have been married during the 1987-to-1992 period. Couples are then followed for another five years (until 1997) or until their break-up if it happened before 1997, regardless of whether the husband experienced other layoffs or had positive earnings after 1992.

6. Permanent layoffs occur when workers separate from their employer in year t and do not return to that employer in year t or year $t+1$. Otherwise, layoffs are classified as temporary.

Those families in which husbands were laid off in any year from 1987 to 2001 constitute our 'treatment' group. Our 'control' group consists of families in which husbands had positive earnings in the 1987-to-2001 period, remained married during this period and did not experience a layoff in any year from 1987 to 2001.

The sample of unattached individuals (single men and single women) has been selected in a similar fashion. The restrictions on total income, self-employment income and EI receipts from 1982 to 2001 were identical to those for the married men.

Our final sample of married couples consists of approximately 60,500 families and 806,800 family-year observations. The sample of single men consists of 4,700 men and 52,100 person-year observations. The sample of single women consists of 6,100 women and 76,200 person-year observations.

Finally, we build on the idea that the loss of pension coverage coinciding with a layoff is likely to indicate that the layoff is permanent. Our 'pension loss' indicator variable (M_i) takes the value of 0 if both criteria hold: (1) husband's contribution to a registered pension plan (RPP) was positive in the year before the layoff and (2) it equals zero in the year after the layoff; otherwise the laid-off worker is not a 'pension loser' (M_i=1). Such a definition allows us to use 'pension losers' as a bench-mark category in our multivariate analyses.[7]

Throughout this paper, we use the term husbands (wives) to refer to men (women) who are either married or live in common-law relationships. All estimates of earnings and income losses are expressed in 2002 dollars, using the Consumer Price Index as a deflator.

IV. Methods

To assess the impact of husbands' layoffs on family income, we take advantage of the methodology used by Jacobson, LaLonde and Sullivan (1993) and Stevens (1997). The approach is to estimate a reduced-form income response to layoffs. The robust asymptotic variance matrix estimator is used to account for arbitrary form serial-correlation and heteroskedasticity (Wooldridge 2002: 275).

In particular, we specify husbands' earnings trajectories using fixed effects models:

$$(1) \qquad y^h_{it} = \alpha_i + \gamma_t + X_{it}B_1 + \sum_{k=a}^{b} D_{it}^{\,k}\delta_k + \varepsilon_{it},$$

where y^h_{it} denote the annual earnings of husband i in year t, X_{it} includes a quadratic term in husbands' age, the number of children aged 15 and over and regional dummies; γ_t is a vector of year effects, $D_{it}^{\,k}$ is a vector of dummy variables that equal 1 if husband i is laid-off k years prior to year t (and $D_{it}^{\,k}$=0 otherwise), α_i is a vector of person-specific fixed effects and ε_{it} is an error term.

7. See Table A.2 for the sample sizes of various groups of families and unattached individuals.

Likewise, we specify the earnings trajectories of wives as follows:

$$(2) \qquad y^{w}_{it} = \phi_i + \vartheta_t + Z_{it}B_2 + \sum_{k=a}^{b} D_{it}^{k}\eta_k + v_{it},$$

where y^{w}_{it} denote the annual earnings of wife i in year t, Z_{it} is a vector of wives' observable characteristics (same as X_{it} except that the quadratic term in age is based on wife's age), ϑ_t is a vector of year effects, D_{it}^{k} is a vector of dummy variables that equal 1 if husband i is laid-off k years prior to year t (and $D_{it}^{k} = 0$ otherwise), φ_i is a vector of person-specific fixed effects, and v_{it} is an error term. Consistent with Stephens (2002), Equation (2) allows wives' earnings to respond to husbands' unemployment both before and after husbands become unemployed.

Finally, the earnings of other family members, y^{o}_{it}, are specified in a similar fashion:

$$(3) \qquad y^{o}_{it} = \mu_i + \kappa_t + X_{it}B_3 + \sum_{k=a}^{b} D_{it}^{k}\lambda_k + u_{it},$$

where X_{it} is the same as in (1). While Equation (2) allows for the presence of an 'added-worker effect' through changes in wives' earnings, Equation (3) also allows other family members to alter their labour supply in response to husbands' unemployment.

Assuming that investment income follows an exogenous process, Equations (1) to (3) can be used to derive a reduced form for both before-tax and after-tax family income[8]:

$$(4) \qquad y^{f}_{it} = \Omega_i + \Psi_t + X_{it}B_4 + \sum_{k=a}^{b} D_{it}^{k}\Theta_k + \tau_{it}$$

where y^{f}_{it} denote family income before (or after) tax, and where Θ_k measures the impact of husbands' layoffs on family income. By definition, Θ_k captures, apart from the contribution of government transfers and personal taxes, the influence on family income of husbands (δ_k), wives (η_k) and other family members (λ_k) before and after husbands' layoff. The 'husband's age' variable in X_{it} is used as a proxy for the 'family's age.'

Since the earnings of displaced workers start to fall substantially at least three years before displacement (Jacobson, LaLonde and Sullivan 1993: 687), we specify a = -3. In order to allow husbands' layoffs to affect family income over several years, we specify b = 5. Thus, we allow husbands' layoffs to affect family income up to three years before and up to five years after their occurrence.

In the models above, we do not allow for the fact that some families have no children of working age (i.e., aged 15 and over) who can adjust their labour supply in response to their father's layoff. To examine the differences in responses by families with and without children aged 15 and over, we consider two additional samples: one in which children aged 15 and over are present in the

8. Family income before tax includes earnings from T4 slips, other employment income, pension and superannuation income, family benefits, Employment Insurance benefits, dividends, interest and investment income, net limited partnership income, rental income, alimony or support income, other income, provincial refundable tax credit, child tax credit and child tax benefit, and Goods and Services Tax and Federal Sales Tax credits.

family at some point during the period in which the family was observed, and another one in which no children aged 15 and over are ever present. In the models corresponding to the former sample, the set of explanatory variables is the same as in Equations (1) to (4); in models corresponding to the latter sample, X_{it} does not include a variable for children aged 15 and over and Equation (3) is not estimated.

The earnings of single men and women are modeled in a fashion similar to those of married men with an obvious exclusion of children from X_{it} in Equation (1):

$$(5) \qquad y^s_{it} = \alpha^s_t + \gamma^s_t + X^s_{it} B^s_1 + \sum_{k=a}^{b} D^{sk}_{it} \delta^s_k + \varepsilon^s_{it},$$

and similar adjustment in Equation (4).

In addition to the models above, we also estimate models in which the set of explanatory variables includes interaction terms with a 'pension loss' variable used as a proxy for permanent layoffs. Equation (1), for instance, takes the following form

$$(6) \qquad y^h_{it} = \alpha_t + \gamma_t + X_{it} B_1 + \sum_{k=a}^{b} D_{it}{}^k \delta_k + \sum_{k=a}^{b} \left(M_t D^k_{it}\right) \omega_k + \varepsilon_{it},$$

with other equations adjusted similarly. Note that M_t=1 if husbands do not lose pension coverage, so δ_k indicates income losses for those who lose their pension after the layoff (proxied by changes in contributions to registered pension plans) while the direction and magnitude of ω_k indicate the reduction (or increase) in income loss for those who did not lose their pension.

V. Descriptive evidence

V.1 Income trajectories of families

Table 1 and Figure 1 illustrate the differences in the income dynamics between families in which husbands experienced layoffs and those in which husbands did not. The upper panel represents income dynamics of an average family in which the husband was laid off in 1992 after having experienced positive earnings and no layoffs from 1987 to 1991. The lower panel shows income dynamics for other families, i.e., those in which husbands experienced no layoffs and had positive earnings throughout the 1987-to-2001 period.[9]

Several points are worth noting. First, even in pre-layoff years, earnings of laid-off husbands are substantially lower than those of other husbands, thereby suggesting that the former might be less skilled than the latter.

Second, consistent with previous studies (Jacobson, LaLonde and Sullivan 1993; Stevens 1997), the earnings of laid-off husbands fall (by about 4%) in the year preceding the layoff and drop by an additional 15% (from $47,200 to $39,900) in the year they were laid off.[10] The decline in

9. The data presented in Tables 1 and 2 and Figures 1 and 2 are based on an unbalanced panel whose construction is defined in Section III.
10. All numbers are rounded to the nearest hundred for confidentiality reasons.

husbands' earnings continues in the year after the layoff; the earnings fall to $35,200 in 1993, so the total drop between year t-1 and year t+1 is approximately $12,000 or 25% of earnings received in 1991.

Third, although husbands' earnings do recover somewhat in the years after the layoff, even five years after the layoff they are still below their pre-layoff level. Since such a comparison does not take account of the earnings growth laid-off husbands would have experienced in the absence of layoffs, it suggests that the earnings losses they experience extend at least over a five-year period. This, in turn, is consistent with the results of Morissette, Zhang and Frenette (2007).

Fourth, the evolution of wives' earnings shows, at least for the specific cohort examined in Table 1 and Figure 1, little support for an 'added worker' effect. The earnings of the wives of laid-off husbands do not seem to deviate from their long-term pre-layoff trend (Figure 1). As will be shown below, this conclusion does not hold in our multivariate analyses for families who have no children of working age.

Fifth, as expected, Employment Insurance (EI) benefits of families of laid-off husbands rise sharply in 1992 and 1993 and return close to their pre-layoff levels in subsequent years, thereby highlighting the temporary stabilization role of the EI program.

Sixth, while earnings of laid-off husbands fell a solid $12,000 from 1991 to 1993, income coming from wives' earnings, earnings of other family members and EI benefits increased by fully $6,000 during that period. As a result, before-tax family income fell only half as much as husbands' earnings.[11]

Seventh, while family income before tax fell by $5,500 from 1991 to 1993, family income after tax dropped by only $3,400 during that period. In fact, while EI benefits stabilize family income only in the short-term, the tax system stabilizes family income in all years preceding and following the layoff.

Finally, even though the earnings of laid-off husbands fell by $400 from 1991 to 1997, their family after-tax income rose by $4,300 during that period, from $56,300 to $60,600. Taken together, the results above suggest, both in the short run and the longer run, that the loss of after-tax income families suffer as a result of husbands' layoff differs markedly from the earnings losses of the husbands, even in the absence of an added worker effect from wives. We investigate this issue in greater depth in the next section.

V.2 Income trajectories of unattached individuals

The earnings losses suffered by single men appear to have more long-term consequences (Table 2 and Figure 2A). The average earnings of single men laid off in 1992 drop from $41,000 in 1990 to $38,600 in 1991 to $33,000 in 1992 and, finally, to $29,200 in 1993. This is a drop of about 25% from year t-1 to year t+1, which is similar to the drop in the earnings of laid-off husbands. However, earnings of single men show a much slower recovery after the layoff. While the earnings of married men eventually reach pre-layoff levels, the earnings profile of single men is

11. Family income before tax fell by $5,500, thereby indicating that other sources of market income and non-market income also rose by $500.

essentially flat in the post-layoff period. Note, however, that the data shown in Table 2 and Figure 2A are based on an unbalanced panel defined in Section III and thus do not represent the earnings trajectories of the *same group* of unattached individuals followed over the *whole* 1987-to-2001 period. Nevertheless, they provide useful trends for a particular cohort (i.e., unattached males laid off in 1992) that is subsequently used along with others for our multivariate analyses.

Finally, in contrast to unattached men, unattached women who were laid off showed faster earnings recovery (Table 2 and Figure 2B). Although in 1991, the average earnings of women who lost their jobs in 1992 were $8,700 lower than those of men, by 2001, their earnings were well above their male counterparts. Similarly, in 1998, women's average before (and after) tax income already exceeded the 1991 level, while men's average income never reached its pre-layoff levels.

VI. Regression results

VI.1 Families

Table 3 presents the regression results for Equations (1) to (4) estimated on our sample of families. As mentioned above, this sample includes both families with no children aged 15 and over (at some point during the observation period) as well as those with such children.

The results shown in the first column of Table 3 are in line with those of several studies that have quantified the earnings losses of displaced workers: earnings losses of husbands who go through a layoff are substantial and persist even five years after the layoff. In the year during which they are laid off, husbands suffer earnings losses of about $13,100. The corresponding number five years after the layoff is about $12,300 (Figure 3).

The second column of Table 3 provides no evidence, at least in the aggregate, that wives increase their annual earnings in response to the layoff of their husbands. In fact, the estimates presented suggest that the years following husbands' layoffs are associated with a decline in wives' earnings. One potential explanation for this pattern is that increases in unemployment due to layoffs might negatively affect both husbands' earnings and wives' earnings (e.g., by decreasing the annual hours of work of both partners) in particularly depressed local labour markets. Alternatively, an added worker effect might be observed only for some family types, as will be shown below.

The third column of Table 3 indicates that earnings of children aged 15 and over change very little following the layoff of their father. Thus, omitting children of working age in an analysis of families' response to layoffs appears to be inconsequential.

In the year during which husbands are laid off, as well as in the following year, before-tax income losses of families experiencing layoffs are at least $5,000 lower than the earnings losses suffered by husbands. As shown in Table 1, the discrepancy is mainly due to the sharp increases in Employment Insurance (EI) benefits that occur during those years.

Taken together, both EI benefits and the tax system tend to substantially mitigate the income losses experienced by families of laid-off husbands. For instance, the income losses after tax

experienced by these families in the year during which the layoffs occur amount to roughly $3,500, much less than the earnings losses of about $13,100 experienced by laid-off husbands. The corresponding numbers for the following year are $7,500 and $16,700, respectively. Likewise, while the earnings losses suffered by husbands amount to $12,300 five years after the layoff, the after-tax income losses for their families are, at $6,400, about twice as low.

Similar qualitative patterns are observed in Table 4 and Figure 4 when the focus is on families with children aged 15 and over.

In contrast, Table 5 provides evidence of an added worker effect for the sub-sample of families with no children aged 15 and over. One year after their husbands are laid off, the annual earnings of wives increase by about $900. They keep rising in subsequent years and, in the fifth year following the layoff, have risen by roughly $2,700, thereby offsetting 22% of the earnings losses of $12,200 experienced by their husbands (Figure 5).

Overall, the results of Tables 3 to 5 highlight the key stabilization role played by the tax system and EI benefits in response to layoffs. Both mechanisms lead Canadian families to experience income losses after tax that are substantially smaller than the earnings losses experienced by laid-off husbands. The numbers rule out the possibility that children aged 15 and over might play an important role in mitigating the earnings losses suffered by their fathers. Finally, the estimates provided are consistent with the presence of an added worker effect, at least for some groups of families.

VI.2 Layoffs leading to a loss of registered pension plan coverage

So far, our analyses have pooled data on both temporary and permanent layoffs. Since the literature on worker displacement generally focuses on job loss, i.e., permanent layoffs, and since permanent layoffs are expected to generate greater earnings losses than temporary ones, it is worth investigating what the income losses are for families who experience permanent layoffs.

While the Longitudinal Administrative Databank and Employment Insurance Administrative Database data do not allow us to distinguish between temporary layoffs and permanent layoffs, they do allow us to identify layoffs that are associated with a loss of registered pension plan (RPP) coverage. Since pension plan terminations by employers are a relatively rare event (Ippolito and Thompson 2000), one can reasonably assume that most workers who lose pension coverage after being laid off permanently lost their job with their former employer. However, because wages and pension coverage are positively correlated (Even and Macpherson 1990), the earnings losses experienced by husbands who lost pension coverage will likely exceed those experienced on average by husbands who go through permanent layoffs.

Table 6 confirms our expectations. Five years after being laid off, husbands who lost RPP coverage suffered earnings losses that varied from $16,000 to $17,300 and thus were $4,400 to $5,600 higher (in absolute value) than those experienced by their counterparts who were laid off

but did not lose pension coverage.[12] As a result, the after-tax income losses experienced by the former group of families were generally higher than those experienced by the latter.

Among families of laid-off husbands with no children aged 15 and over, wives' annual earnings rose $3,800 five years after the loss of their husbands' RPP coverage and by about $2,500 five years after the occurrence of other layoffs. In both cases, the growth in the annual earnings of wives tended to offset from 22% to 24% of the long-term earnings losses experienced by husbands. Once again, this suggests the presence of an added worker effect for this group of families, i.e., families with no children aged 15 and over.

VI.3 Unattached individuals

Earnings losses of unattached individuals might differ from those of husbands for a variety of reasons. Since the former group are likely to be more geographically mobile than the latter, they might take advantage of favourable job offers in other local labour markets more frequently, after losing their job. As a result, they might incur smaller earnings losses than the latter group following displacement. Furthermore, as long as they have lower wealth holdings than their married counterparts, unattached individuals might search more intensely for new jobs following a layoff. This may reduce the duration of the unemployment spell that they incur after job loss, thereby mitigating their earnings losses in the short run. However, this may also lead them to accept lower wage offers and thus potentially incur greater long-term earnings losses than those suffered by displaced married workers.

Table 7 shows the earnings losses and income losses experienced by unattached men and women following layoffs. As was the case for families, the income losses that unattached men and women experience before tax are, in the year during which layoffs occur and in the following year, much smaller than the earnings losses these individuals suffer (Figures 6 and 7). This is, in good part, due to the receipt of EI benefits during that period. Five years after the layoffs, income losses after tax also differ substantially from earnings losses.

Are the earnings losses of unattached males lower than those of husbands in absolute terms? Not necessarily. A comparison of Table 3 and Table 7 shows that while unattached men experience, one year after the layoff, earnings losses that are smaller than those of husbands ($15,500 compared with $16,700), the reverse is true five years after the layoff ($13,700 compared with $12,300). In contrast, earnings losses of unattached women are, in absolute terms, always lower than those experienced by husbands.

Are the earnings losses of unattached males lower than those of husbands in absolute terms? Not necessarily. A comparison of Table 3 and Table 7 shows that while unattached men experience, one year after the layoff, earnings losses that are smaller than those of husbands ($15,500 compared with $16,700), the reverse is true five years after the layoff ($13,700 compared with $12,300). In contrast, earnings losses of unattached women are, in absolute terms, always lower than those experienced by husbands.

12. The reference group regarding loss of registered pension plan (RPP) coverage consists of families where husbands lost pension coverage as a result of a layoff. To obtain the income losses of families where husbands were laid off but did not lose pension coverage, one needs to add the coefficient estimate for the reference group and the interaction term (labelled as *t*+5 * No loss of RPP, in Table 6).

More important, the after-tax income losses experienced by unattached men five years after a layoff ($7,700) are not lower than those experienced by families of laid-off husbands ($6,400). Combined with the fact that laid-off unattached males have lower after-tax income than these families prior to layoffs, this suggests that the relative income shocks experienced by the former exceed those suffered by the latter group.

Table 8 replicates Table 6 for unattached men and women. It confirms that unattached individuals who lose pension coverage following a layoff experience substantially greater earnings and income losses than other laid-off unattached individuals.

VII. Relative income shocks following layoffs

The numbers presented in Tables 1 to 8 document the earnings and income losses that families and unattached individuals experience, in absolute terms, as a result of layoffs. One interesting issue is whether the magnitude of the income shocks, defined in relative terms, differs across family units. For instance, Tables 1 and 2 indicate that four years before being laid off, unattached men who were laid off in 1992 earned much less ($38,800) than husbands ($49,400). Since earnings losses of the two groups do not differ that much in absolute terms (Tables 3 and 7), this suggests that the relative earnings shocks experienced by unattached males are greater than those experienced by husbands.

Table 9 shows that this is indeed the case. When dividing the earnings losses shown in Tables 3 and 7 by a weighted average of the earnings received by various cohorts over a 3-year period preceding the layoffs (i.e., in year t-2, t-3 and t-4), relative earnings losses of unattached men are always higher than those of husbands.[13] For example, earnings losses experienced five years after the layoff represent 39% of pre-layoff earnings of unattached men and 27% of those of husbands.

Differences in relative income shocks Table 10) experienced by the two groups are, in relative terms (i.e., expressed in terms of ratios between the two groups), even more pronounced. From t+1 to t+5 (i.e., during the period covering the first year following the layoff and the fifth year), relative after-tax income losses of families of laid-off husbands averaged 10%. In contrast, those of unattached males were, at 23%, more than twice as high. The reason is that pre-layoff after-tax income averaged $68,200 for families of laid-off husbands, more than twice the amount of $32,700 observed for unattached men. This finding suggests that layoffs among adult male earners increase income instability much more for unattached males than they do for families of laid-off husbands.

VIII. Conclusion

How do families and unattached individuals respond to layoffs? The answer to this question depends on the type of family considered. Families with no children of working age seem to

13. The denominator used is an average (weighted by the size of the various cohorts of husbands and unattached men who were laid-off from 1987 to 2001) of the mean earnings received in year t-2, t-3 and t-4, where year t refers to the year during which layoffs occurred. This denominator equals $46,200 for husbands and $34,700 for unattached men.

adjust partially to husbands' layoffs through an increase in wives' employment income, which suggests that wives in these families increase their labour supply in response to their husbands' layoff. Five years after husbands' layoffs, the increase in wives' earnings offsets about one fifth of husbands' earnings losses. Thus, the data suggest the presence of an added worker effect, at least in some Canadian families. The magnitude of the response observed for these wives is somewhat smaller than that found by Stephens (2002). This is not surprising since: a) our definition of layoffs includes both temporary layoffs and permanent layoffs and, b) wives' responses to temporary layoffs are expected to be smaller than their responses to permanent layoffs.[14]

Children aged 15 and over do not play an important role in mitigating the earnings losses experienced by their father after his layoff. To a large degree this finding is expected since many teenagers and young adults are still attending school full-time and thus likely have little time to devote to paid work.

Even though they likely have greater geographic mobility than husbands, unattached males generally do not fare better than husbands after a layoff. In fact, unattached men experience greater relative earnings losses than husbands in all five years that follow a layoff. Furthermore, they also experience much greater relative (after-tax) income shocks than the latter as a result of layoffs.

Finally, our results highlight the key stabilization role played by Employment Insurance benefits and the tax system in mitigating the income losses suffered by unattached individuals and families of laid-off husbands. Both stabilizers reduce after-tax income losses in the short run, while the tax system also reduces these losses in all subsequent years. As a result, after-tax income losses of families and unattached individuals end up being substantially smaller than the earnings losses experienced on an individual basis by laid-off workers.

14. In contrast, Stephens (2002) considers wives' labour supply response to husbands' displacement, where displacement is defined to occur when: a) plants closed or employers moved, b) the worker was laid off or fired. As a result, the sample of displaced workers used by Stephens (2002) is likely to measure predominantly permanent layoffs.

Table 1
Family income (in 2002 dollars) following husbands' layoffs, 1987 to 2001

Year	Earnings of husbands	Earnings of wives	Earnings of other members	Family Employment Insurance benefits	Family income before tax	Family income after tax
	Families of husbands laid off in 1992 (with no layoffs and positive earnings from 1987 to 1991)					
1987	47,700	16,200	200	1,000	67,900	53,800
1988	49,400	16,800	300	1,100	70,800	56,300
1989	49,300	17,500	600	1,300	72,000	57,000
1990	49,200	17,800	700	1,300	72,700	57,100
1991	47,200	17,800	900	1,800	71,500	56,300
1992	39,900	19,000	1,000	4,100	71,500	57,200
1993	35,200	19,900	1,300	5,300	66,000	52,900
1994	40,500	20,100	1,700	3,000	69,500	55,600
1995	43,800	20,800	2,000	2,000	72,600	57,600
1996	44,900	20,900	2,500	1,800	74,200	58,700
1997	46,800	21,700	3,300	1,300	77,000	60,600
1998	48,400	22,500	4,200	1,300	80,400	63,400
1999	49,500	23,100	5,300	1,100	83,100	65,800
2000	49,900	24,400	6,800	1,200	87,400	69,600
2001	49,700	24,300	8,400	1,300	88,200	71,800
	Families of husbands with positive earnings and no layoffsfrom 1987 to 2001					
1987	53,700	18,000	100	900	75,800	59,300
1988	55,300	18,800	200	900	78,400	61,600
1989	56,600	19,600	400	800	80,600	62,700
1990	57,500	20,600	600	800	82,800	63,700
1991	57,200	20,700	700	900	82,600	63,600
1992	58,600	21,900	900	900	85,500	66,000
1993	58,700	22,400	1,200	800	85,800	66,100
1994	60,200	23,200	1,600	700	88,600	68,000
1995	60,400	23,700	2,200	600	90,100	69,100
1996	60,900	24,200	2,700	500	91,700	70,300
1997	62,100	24,900	3,500	500	94,200	71,900
1998	64,100	26,100	4,600	400	99,000	75,800
1999	64,900	27,100	5,700	400	102,100	78,400
2000	65,900	28,400	7,100	400	106,500	82,100
2001	66,300	28,400	8,500	400	108,900	86,200

Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table 2
Income (in 2002 dollars) of unattached individuals following layoffs, 1987 to 2001

Year	Individual earnings		Employment Insurance benefits		Income before tax		Income after tax	
	Men	Women	Men	Women	Men	Women	Men	Women
	Unattached individuals laid off in 1992, with no layoffs and positive earnings from 1987 to 199							
1987	37,800	32,200	500	400	39,700	33,600	30,900	26,700
1988	38,800	33,900	700	200	41,000	35,100	32,000	28,200
1989	40,400	32,700	300	600	44,400	34,600	33,900	27,700
1990	41,000	30,100	400	1,400	42,900	33,000	33,000	26,200
1991	38,600	29,900	1,000	1,200	41,400	32,900	31,800	26,200
1992	33,000	26,200	2,700	2,900	42,300	32,900	33,100	26,800
1993	29,200	20,100	4,300	4,700	35,900	27,000	28,100	22,000
1994	32,700	24,900	2,000	1,900	36,600	28,200	28,700	22,500
1995	31,500	27,800	900	1,000	35,000	30,300	27,400	24,500
1996	29,600	28,900	1,200	800	33,400	31,300	26,300	24,900
1997	29,500	29,500	500	800	32,500	31,500	25,600	25,100
1998	31,100	31,700	500	500	34,500	33,400	27,300	26,800
1999	31,100	33,300	900	700	34,300	35,200	26,900	28,000
2000	31,400	33,800	500	600	36,100	35,800	28,500	28,300
2001	29,500	33,700	600	600	33,000	35,500	27,000	29,100
	Unattached individuals with positive earnings and no layoff from 1987 to 2001							
1987	46,000	42,400	70	60	47,800	44,000	36,700	34,200
1988	46,900	43,400	80	70	48,900	45,000	37,700	35,200
1989	48,000	44,300	80	60	50,300	46,100	38,400	35,700
1990	48,900	45,900	70	70	51,600	47,800	39,000	36,700
1991	48,800	46,100	60	70	51,200	47,900	38,600	36,700
1992	50,400	47,800	70	80	52,200	49,200	39,600	37,700
1993	50,100	47,800	40	60	51,800	49,100	39,300	37,500
1994	51,000	48,300	30	70	52,600	49,700	39,700	38,000
1995	51,000	48,200	40	60	53,000	50,000	39,900	38,100
1996	50,700	48,300	30	50	52,900	50,000	39,800	38,100
1997	51,300	48,600	40	40	53,500	50,200	40,000	38,200
1998	52,700	49,800	40	40	54,900	51,300	41,200	39,200
1999	53,500	50,500	30	30	56,500	52,200	42,500	39,900
2000	55,000	52,200	40	40	58,400	54,600	43,800	41,800
2001	54,600	50,900	90	50	57,800	53,600	44,900	42,200

Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table 3
Income losses (in 2002 dollars) following husbands' layoffs, all families

Indicators of husbands' layoff	Annual earnings			Family income before tax	Family income after tax
	Husbands	Wives	Other family members		
3 years before	-2,018 ***	-398 ***	111 **	-1,297 ***	-720 ***
	(123)	(90)	(43)	(162)	(117)
2 years before	-3,287 ***	-661 ***	128 **	-2,270 ***	-1,322 ***
	(123)	(88)	(43)	(159)	(117)
1 year before	-5,518 ***	-932 ***	142 **	-3,743 ***	-2,212 ***
	(128)	(87)	(45)	(164)	(121)
Year of layoff	-13,117 ***	-991 ***	166 ***	-6,316 ***	-3,510 ***
	(135)	(86)	(46)	(203)	(152)
1 year after	-16,690 ***	-936 ***	223 ***	-11,511 ***	-7,454 ***
	(150)	(90)	(48)	(178)	(131)
2 years after	-14,009 ***	-1,268 ***	214 ***	-11,130 ***	-7,113 ***
	(146)	(95)	(51)	(183)	(134)
3 years after	-13053 ***	-1,359 ***	248 ***	-10,566 ***	-6,712 ***
	(150)	(102)	(57)	(190)	(139)
4 years after	-12,708 ***	-1,446 ***	295 ***	-10,388 ***	-6,562 ***
	(156)	(109)	(63)	(201)	(147)
5 years after	-12,283 ***	-1,386 ***	350 ***	-10,148 ***	-6399 ***
	(171)	(119)	(73)	(224)	(163)

* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

Notes: All regressions also include year effects as well as additional controls defined in Equations (1) to (4). See text for detail. Heteroskedastic-robust standard errors are in parentheses.
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table 4
Income losses (in 2002 dollars) following husbands' layoffs, families with children aged 15 and over

Indicators of husbands' layoff	Annual earnings						Family income before tax		Family income after tax	
	Husbands		Wives		Other family members					
3 years before	-2,318	***	-333	***	170	*	-1,345	***	-715	***
	(155)		(102)		(67)		(204)		(148)	
2 years before	-3,566	***	-496	***	163	*	-2,376	***	-1,332	***
	(160)		(98)		(69)		(196)		(147)	
1 year before	-5,652	***	-816	***	131		-3,642	***	-2,114	***
	(169)		(101)		(74)		(214)		(162)	
Year of layoff	-13,629	***	-932	***	105		-5,768	***	-2,982	***
	(184)		(102)		(76)		(284)		(218)	
1 year after	-17,545	***	-1,079	***	105		-12,257	***	-8,017	***
	(207)		(107)		(79)		(234)		(175)	
2 years after	-14,541	***	-1,391	***	-32		-11,978	***	-7,776	***
	(198)		(113)		(85)		(239)		(179)	
3 years after	-13,608	***	-1,549	***	-100		-11,756	***	-7,659	***
	(202)		(121)		(96)		(249)		(187)	
4 years after	-13,095	***	-1,895	***	-80		-11,844	***	-7,727	***
	(210)		(132)		(108)		(264)		(197)	
5 years after	-12,498	***	-2,001	***	-21		-11,729	***	-7,729	***
	(235)		(144)		(129)		(298)		(223)	

*$p < 0.05$
** $p < 0.01$
*** $p < 0.001$

Notes: All regressions also include year effects as well as additional controls defined in Equations (1) to (4). See text for detail. Heteroskedastic-robust standard errors are in parentheses.

Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table 5
Income losses (in 2002 dollars) following husbands' layoffs, families with no children aged 15 and over

Indicators of husbands' layoff	Annual earnings		Family income before tax	Family income after tax
	Husbands	Wives		
3 years before	-1,322 ***	-411 **	-1,040 ***	-626 ***
	(203)	(175)	(273)	(194)
2 years before	-2,662 ***	-457 ***	-1,742 ***	-1,103 ***
	(200)	(170)	(280)	(200)
1 year before	-5,087 ***	-216	-3,221 ***	-1,983 ***
	(205)	(167)	(277)	(198)
Year of layoff	-12,318 ***	247	-5,927 ***	-3,517 ***
	(215)	(167)	(321)	(229)
1 year after	-15,649 ***	919 ***	-9,667 ***	-6,333 ***
	(236)	(174)	(313)	(223)
2 years after	-13,375 ***	1,192 ***	-8,942 ***	-5,766 ***
	(238)	(187)	(328)	(231)
3 years after	-12,445 ***	1,688 ***	-7,823 ***	-4,980 ***
	(245)	(200)	(343)	(241)
4 years after	-12,303 ***	2,247 ***	-7,213 ***	-4,534 ***
	(254)	(211)	(365)	(255)
5 years after	-12,158 ***	2,695 ***	-6,843 ***	-4,247 ***
	(274)	(227)	(401)	(280)

*$p < 0.05$
** $p < 0.01$
*** $p < 0.001$

Note: All regressions also include year effects as well as additional controls defined in Equations (1) to (4). See text for detail. Heteroskedastic-robust standard errors are in parentheses.

Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table 6
Income losses (in 2002 dollars) five years after layoffs leading to loss of registered pension plan coverage

	Annual earnings			Family income before tax	Family income After tax
	Husbands	Wives	Other family members		
All families					
5 years after loss of registered pension plan	-16,901 ***	-425	406 *	-11,351 ***	-7,420 ***
	(528)	(326)	(199)	(645)	(473)
t+5 * No loss of registered pension plan	5,397 ***	-1,106 **	-65	1,379 *	1,170 *
	(554)	(345)	(210)	(674)	(495)
Families with children aged 15 and over					
5 years after loss of registered pension plan	-17,291 ***	-1,302 ***	233	-12,447 ***	-8,250 ***
	(763)	(374)	(353)	(912)	(681)
t+5 * No loss of registered pension plan	5,614 ***	-806 *	-295	802	580
	(798)	(400)	(377)	(959)	(716)
Families with no children aged 15 and over					
5 years after loss of registered pension plan	-15,984 ***	3,788 ***	...	-9,056 ***	-6,172 ***
	(760)	(614)	...	(969)	(685)
t+5 * No loss of registered pension plan	4,447 ***	-1,253 *	...	2,572 **	2,236 **
	(795)	(637)	...	(982)	(696)

... not applicable
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$
Notes: All regressions also include year effects as well as additional controls defined in Equations (1) to (4). See text for detail. Heteroskedastic-robust standard errors are in parentheses. The reference group for families or laid-off husbands consists of families where husbands lost registered pension plan coverage as a result of a layoff.
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table 7
Income losses (in 2002 dollars) following layoffs, unattached men and women

Indicators of layoff	Annual earnings		Income before tax		Income after tax	
	Men	Women	Men	Women	Men	Women
3 years before	-1,417 ***	-2,050 ***	-944 *	-1,350 ***	-704 *	-896 ***
	(379)	(311)	(438)	(299)	(287)	(225)
2 years before	-2,753 ***	-3,591 ***	-1,893 ***	-2,311 ***	-1,260 ***	-1,641 ***
	(376)	(320)	(392)	(328)	(278)	(251)
1 year before	-5,342 ***	-6,086 ***	-3,562 ***	-3,952 ***	-2,377 ***	-2,692 ***
	(380)	(327)	(409)	(339)	(292)	(265)
Year of layoff	-12,183 ***	-11,414 ***	-6,613 ***	-5,966 ***	-4,313 ***	-3,818 ***
	(392)	(328)	(447)	(410)	(337)	(322)
1 year after	-15,516 ***	-13,280 ***	-10,724 ***	-9,183 ***	-7,563 ***	-6,482 ***
	(445)	(349)	(442)	(345)	(323)	(268)
2 years after	-13,613 ***	-10,831 ***	-10,456 ***	-8,647 ***	-7,313 ***	-6,135 ***
	(445)	(355)	(460)	(363)	(331)	(269)
3 years after	-13,911 ***	-9,911 ***	-11,012 ***	-7,921 ***	-7,665 ***	-5,528 ***
	(471)	(365)	(474)	(369)	(348)	(277)
4 years after	-13,941 ***	-9,430 ***	-11,112 ***	-7,407 ***	-7,800 ***	-5,147 ***
	(513)	(395)	(515)	(406)	(372)	(298)
5 years after	-13,681 ***	-9,518 ***	-11,145 ***	-7,462 ***	-7,712 ***	-5,131 ***
	(583)	(435)	(585)	(434)	(423)	(326)

*$p < 0.05$
** $p < 0.01$
*** $p < 0.001$

Notes: All regressions also include year effects as well as additional controls defined in Equation 5. See text for details.
Heteroskedastic-robust standard errors are in parentheses.
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table 8
Income losses (in 2002 dollars) five years after layoffs leading to loss of registered pension plan coverage, unattached individuals

	Annual earnings	Income before tax	Income after tax
Unattached men			
5 years after loss of registered pension plan	-19,652 ***	-15,621 ***	-11,458 ***
	(1,527)	(1,517)	(1,135)
t+5 * No loss of registered pension plan	7,199 ***	5,303 ***	4,432 ***
	(1,623)	(1,604)	(1,192)
Unattached women			
5 years after loss of registered pension plan	-13,904 ***	-10,709 ***	-7,739 ***
	(1,148)	(1,326)	(986)
t+5 * No loss of registered pension plan	5,311 ***	3,864 **	3,103 **
	(1,224)	(1,381)	(1,030)

* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

Note: All regressions also include year effects as well as additional controls defined in Equations (1) to (4). See text for detail. Heteroskedastic-robust standard errors are in parentheses. The reference group for unattached individuals who were laid off consists of persons who lost registered pension plan coverage as a result of a layoff.

Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table 9
Relative earnings shocks experienced by husbands and unattached men

	Earnings losses		Relative earnings losses	
	Husbands	Unattached men	Husbands	Unattached men
	2002 dollars		percent	
Year of layoff	-13,117	-12,183	28.4	35.1
1 year after	-16,690	-15,516	36.1	44.7
2 years after	-14,009	-13,613	30.3	39.2
3 years after	-13,053	-13,911	28.3	40.1
4 years after	-12,708	-13,941	27.5	40.2
5 years after	-12,283	-13,681	26.6	39.4

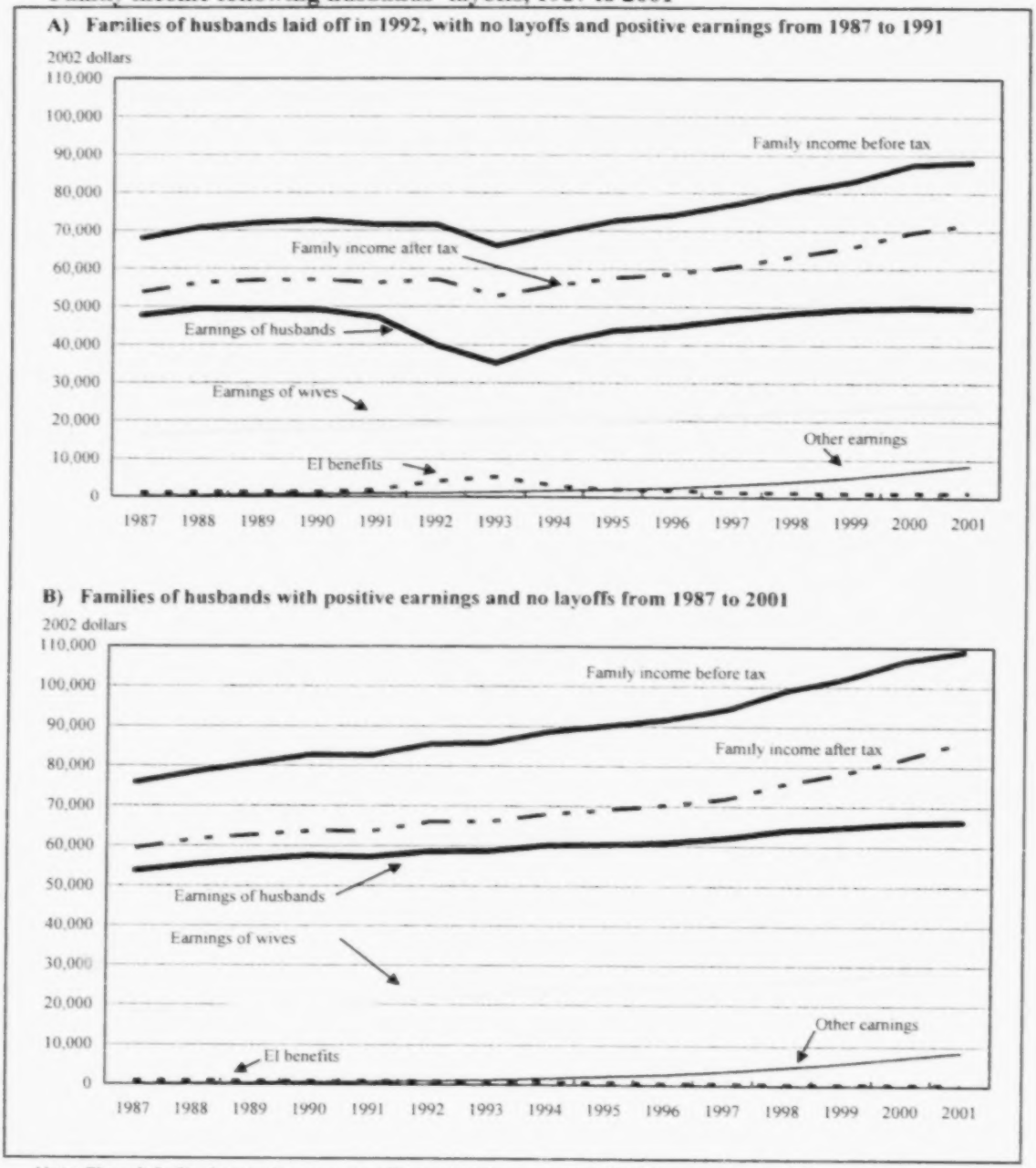
Note: The numbers in the first two columns (earnings losses) are taken from Tables 3 and 7. Relative earnings losses are obtained using as a denominator a weighted average of the earnings received over a 3-year period preceding the layoff (i.e., in year *t*-2, *t*-3 and *t*-4) by the various cohorts who were laid off between 1987 and 2001.
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table 10
Relative income shocks experienced by husbands and unattached men

	After-tax income losses		Relative after-tax income losses	
	Husbands	Unattached men	Husbands	Unattached men
	2002 dollars		percent	
Year of layoff	-3,510	-4,313	5.1	13.2
1 year after	-7,454	-7,563	10.9	23.1
2 years after	-7,113	-7,313	10.4	22.4
3 years after	-6,712	-7,665	9.8	23.4
4 years after	-6,562	-7,800	9.6	23.9
5 years after	-6,399	-7,712	9.4	23.6

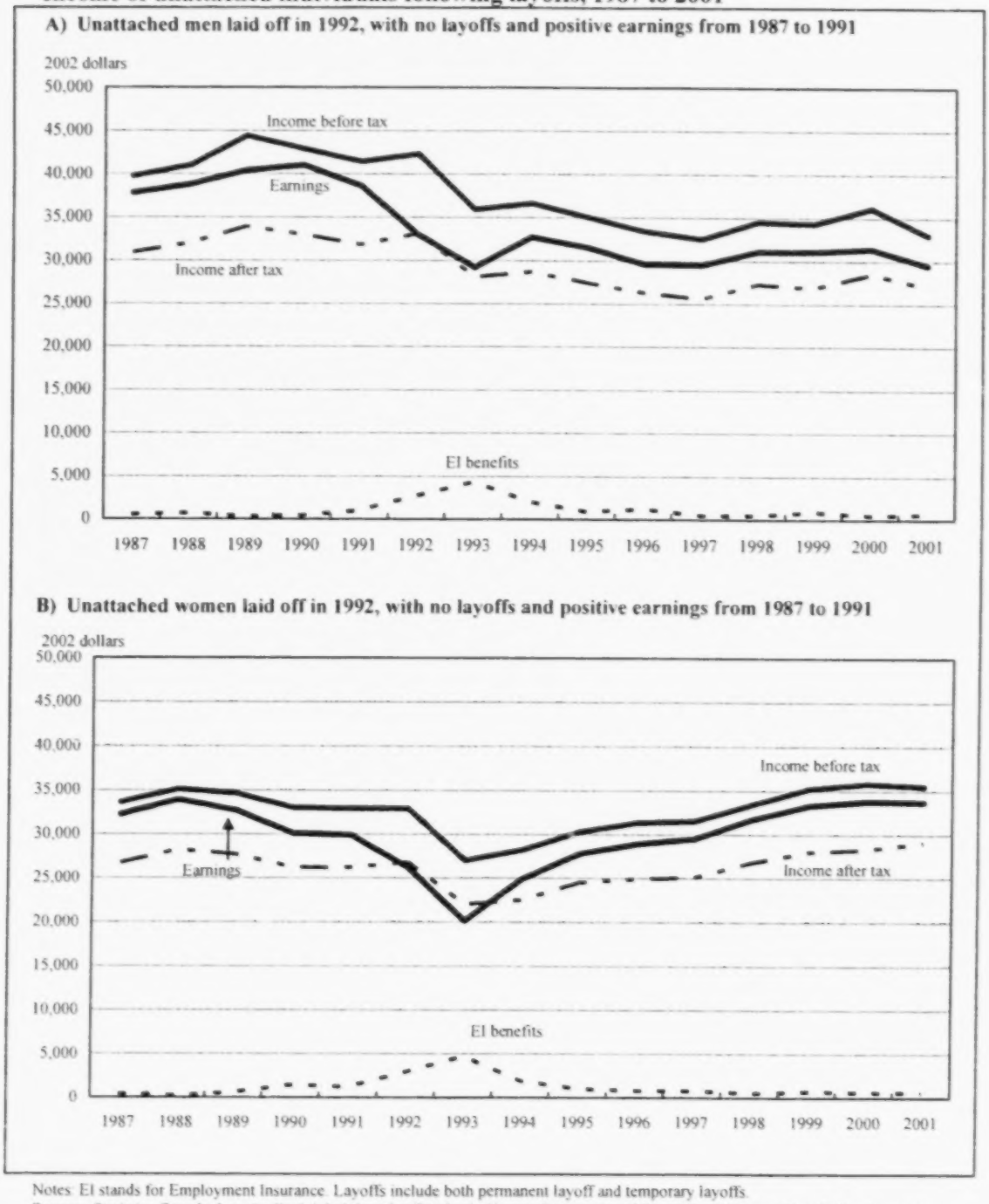
Note: The numbers in the first two columns (after-tax income losses) are taken from Tables 3 and 7. Relative income losses are obtained using as a denominator a weighted average of the income received over a 3-year period preceding the layoff (i.e., in year *t*-2, *t*-3 and *t*-4) by the various cohorts who were laid off between 1987 and 2001.
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Figure 1
Family income following husbands' layoffs, 1987 to 2001



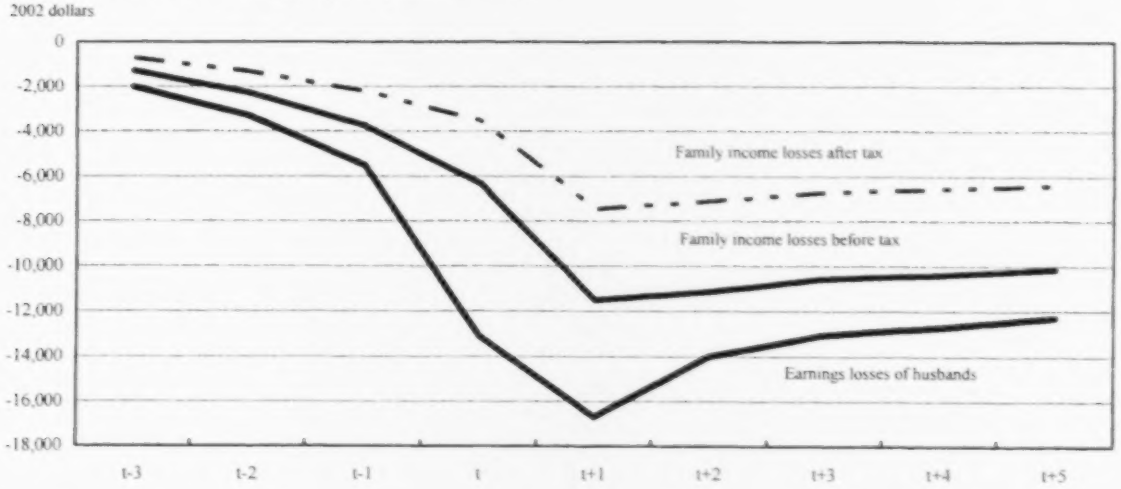
Notes: EI stands for Employment Insurance. Layoffs include bothpermanent layoff and temporary layoffs.
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Figure 2
Income of unattached individuals following layoffs, 1987 to 2001



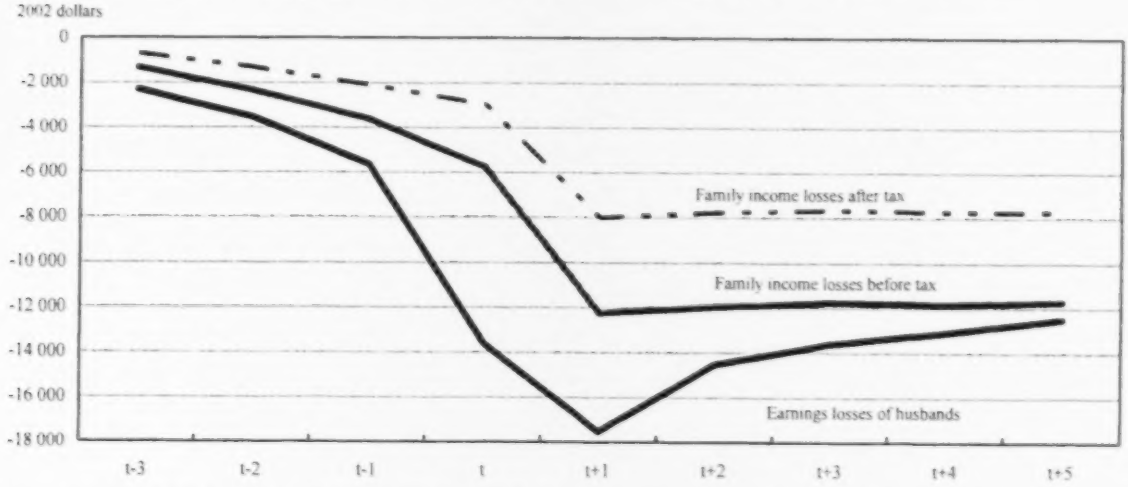
Notes: EI stands for Employment Insurance. Layoffs include both permanent layoff and temporary layoffs.
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Figure 3
Income losses following layoffs, all families



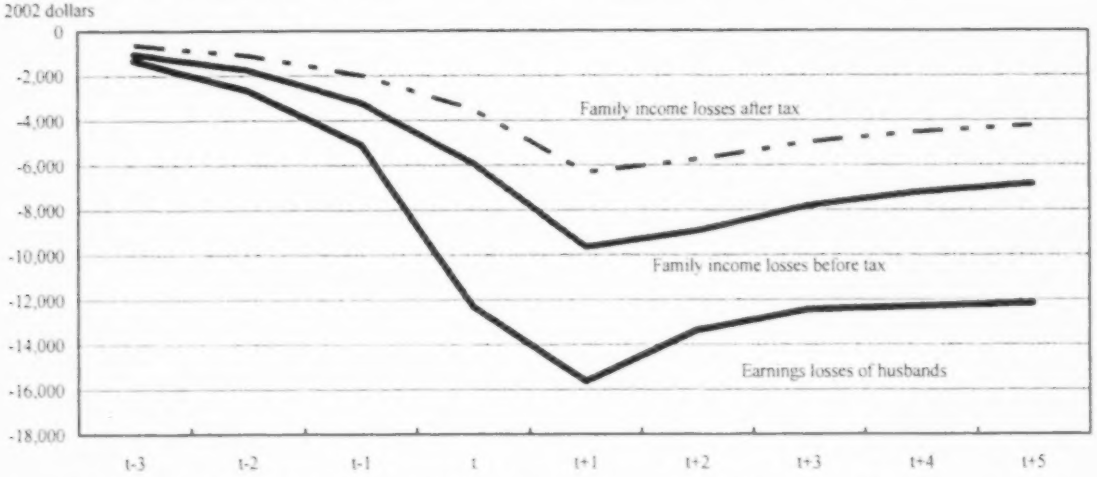
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Figure 4
Income losses following layoffs, families with children aged 15 and over



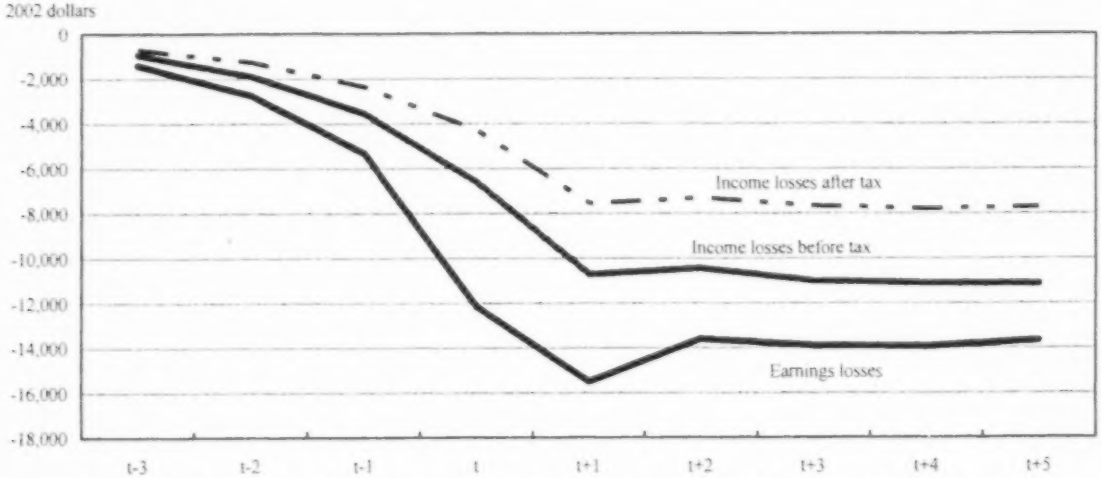
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Figure 5
Income losses following layoffs, families with no children aged 15 and over



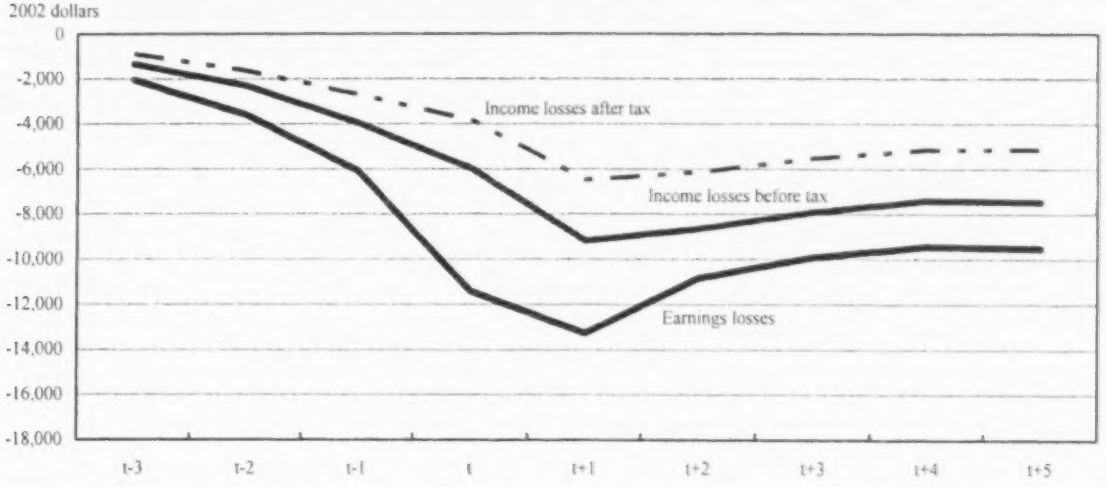
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and SocialDevelopment Canada, Employment Insurance Administrative Database

Figure 6
Income losses following layoffs, unattached men



Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social DevelopmentCanada, Employment Insurance Administrative Database

Figure 7
Income losses following layoffs, unattached women



Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada,Employment Insurance Administrative Database.

Appendix

Table A.1
Layoffs among men aged from 25 to 40, 1988 to 2001[1]

Year	Longitudinal Worker File			LAD-EIAD [2]
	Permanent layoffs	Temporary layoffs	Total	Total
1988	58,278	45,193	103,471	102,900
1989	61,261	55,202	116,463	116,600
1990	84,096	79,667	163,763	158,300
1991	86,152	87,962	174,114	165,400
1992	75,587	70,442	146,030	143,200
1993	66,994	59,802	126,795	123,200
1994	63,375	49,905	113,280	111,600
1995	67,776	56,349	124,125	119,100
1996	70,324	59,771	130,095	123,200
1997	80,485	66,892	147,376	134,500
1998	87,732	76,530	164,263	148,900
1999	86,333	69,538	155,871	141,900
2000	82,791	71,408	154,199	143,300
2001	103,266	88,997	192,264	181,000

1. Men who did not receive Employment Insurance benefits in the five previous years.
2. Longitudinal Administrative Databank and Employment Insurance Administrative Database.
Sources: Statistics Canada, Longitudinal Worker File and Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table A.2
Sample size for various groups of families

Total number of families	60,500
Husbands are laid off	18,000
Lose registered pension plan coverage	2,150
Others	15,850
Control group	42,500
Number of families with children aged 15 and over	42,200
Husbands are laid off	8,800
Lose registered pension plan coverage	1,200
Others	7,600
Control group	33,400
Number of families with no children aged 15 and over	18,300
Husbands are laid-off	9,200
Lose registered pension plan coverage	1,000
Others	8,200
Control group	9,100

Note: Sub-categories may not add to total due to rounding.
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

Table A.3
Sample size for various groups of unattached individuals

Number of single men	4,700
Laid off	2,300
Lose registered pension plan coverage	300
Others	2,000
Control group	2,300
Number of single women	6,100
Laid off	2,200
Lose registered pension plan coverage	300
Others	2,000
Control group	3,900

Note: Sub-categories may not add to total due to rounding.
Sources: Statistics Canada, Longitudinal Administrative Databank; Human Resources and Social Development Canada, Employment Insurance Administrative Database.

References

Blau, Francine D., and Lawrence M. Kahn. 2005. *Changes in the Labor Supply Behavior of Married Women: 1980-2000.* NBER Research Paper no. 11230. Cambridge, Mass.: National Bureau of Economic Research.

Card, David, and Thomas Lemieux. 1997. *Adapting to Circumstances: The Evolution of Work, School and Living Arrangements Among North American Youth.* NBER Research Paper no. 6142. Cambridge, Mass.: National Bureau of Economic Research.

Cullen, Julie Berrie, and Jonathan Gruber. 2000. "Does unemployment insurance crowd out spousal labor supply?" *Journal of Labor Economics*. 18, 3: 546–572.

Eliason, Marcus, and Donald Storrie. 2006. "Lasting or latent scars? Swedish evidence on the long-term effects of job displacement." *Journal of Labor Economics*. 24, 4: 831–856.

Even, William E., and David A. Macpherson. 1990. "The gender gap in pensions and wages." *The Review of Economics and Statistics*. 72, 2: 259–265.

Fallick, Bruce C. 1996. "A review of the recent empirical literature on displaced workers." *Industrial and Labor Relations Review*. 50, 1: 5–16.

Heckman, James J., and Thomas E. Macurdy. 1980. "A life cycle model of female labour supply." *Review of Economic Studies*. 47, 146: 47–74.

Ippolito, Richard A., and John W. Thompson. 2000. "The survival rate of defined-benefit plans, 1987-1995." *Industrial Relations*. 39, 2: 228–245.

Jacobson, Louis S., Robert J. LaLonde and Daniel G. Sullivan. 1993. "Earnings losses of displaced workers." *American Economic Review*. 83, 4: 685–709.

Jenkins, Stephen P. 2000. "Modelling household income dynamics." *Journal of Population Economics*. 13, 4: 529–567.

Kletzer, Lori G. 1998. "Job displacement." *Journal of Economic Perspectives*. 12, 1: 115–136.

Kniesner, Thomas J., and James P. Ziliak. 2002. "Tax reform and automatic stabilization." *American Economic Review*. 92, 3: 590–612.

Morissette, René, Xuelin Zhang and Marc Frenette. 2007. *Earnings Losses of Displaced Workers: Canadian Evidence From a Large Administrative Database on Firm Closures and Mass Layoffs.* Analytical Studies Branch Research Paper Series. Catalogue no. 11F0019MIE2007291. Ottawa: Statistics Canada.

Ruhm, Christopher J. 1991. "Are workers permanently scarred by job displacements?" *American Economic Review*. 81, 1: 319–324.

Stephens, Melvin Jr. 2002. "Worker displacement and the added worker effect." *Journal of Labor Economics*. 20, 3: 504–537.

Stephens, Melvin Jr. 2001. "The long-run consumption effects of earnings shocks." *The Review of Economics and Statistics*. 83, 1: 28–36.

Stevens, Ann Huff. 2001. "Changes in earnings instability and job loss." *Industrial and Labor Relations Review*. 55, 1: 60–78.

Stevens, Ann Huff. 1997. "Persistent effects of job displacement: The importance of multiple job losses." *Journal of Labor Economics*. 15, 1: 165–188.

Wooldridge, Jeffrey M. 2002. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, Mass.: MIT Press.

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